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Contents for Week of February 26, 1940. Vol. XIX. No. 2.

- 1. The "Waistline" Sector of Finland's Fighting Front
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- 5. South America's Lake Titicaca To Have North American Fish



Photograph by Dorothy Hosmer

DID THE PIED PIPER LURE THEM FROM HAMELIN TOWN TO ROMANIA?

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HOW TEACHERS MAY OBTAIN THE BULLETINS

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The "Waistline" Sector of Finland's Fighting Front

ALTHOUGH newspapers cannot fit the long name into short headlines, Suomussalmi has reappeared regularly in news of the war in Finland. For the Finnish eastern village is a key spot in the Russian campaign against Finland's "waistline"-the central region where the country's hourglass figure narrows to a 125-mile span. From Suomussalmi to the Gulf of Bothnia, a wedge of the Soviet Union's troops would have to drive due west for little more than the length of New

York's Long Island to cut the long expanse of Finland in two.

Called Suomi in Finnish, Finland is personified as the "Suomi-Maiden" by poets, who see in their map's outline the suggestion of a woman's figure, with full skirts blowing in the south and foreshortened arms lifted above her head in the north. The Suomi-Maiden's waistline is marked by the village of Suomussalmi in the east and the port of Oulu in the west. The belt of narrow land between is cloaked with the green of almost unbroken primeval forests, dotted with lakes —the landscape in which the hardy and resourceful rural Finn has learned to thrive.

Forester Makes His Own Skis at Home

Between Suomussalmi and the large port on the coast, there is no settlement of more than one or two hundred people. A cross-section would show a forested tableland in the east, draining into the lake system of Oulujärvi, and in the west a river-striped, gentle slope to the Gulf of Bothnia. More than half of the forest land in the east, some of it bogged down in frozen swamps, is owned by the Fin-

nish government.

The Finn whose isolated wooden house occupies a clearing in this waistline region is a farmer in summer, a forester in winter, a fisherman in spring, and a dairyman the year round. The typical farmer owns his land, as do more than 60 per cent of Finland's farmers. In winter, donning his high soft leather boots with turned-up toes, he goes on skis into the forest to fell trees, strip them of branches, and drag them on a homemade sled over the snow to the nearest watercourse. After some six hours of daylight, the early winter night sends him indoors to whittle ax handles, butter tubs, or hand-turned parts for furniture. He makes his own skis, carefully steaming the tips to turn them up at the proper angle. With the spring thaw of river ice, he floats his logs downstream. To "ride herd" on the timber while crossing one of the numerous lakes, he may tie the logs into bundles like asparagus, string the bundles together, and hitch them to a wood-burning tug boat.

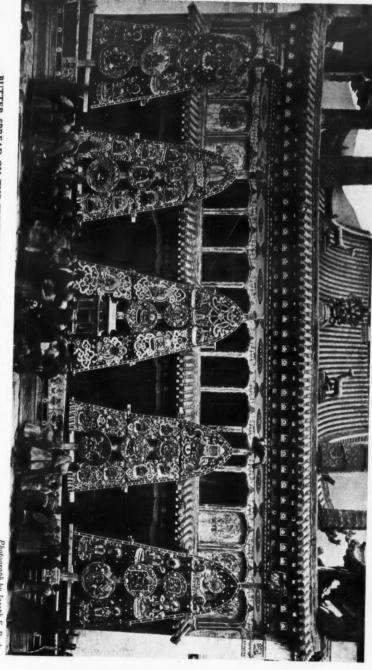
Bear Dens, Berry Patches, and Wood Tar Found in Forests

In summer the forester becomes a farmer, raising turnips, potatoes, barley, and rye. Twenty hours of sunlight a day compensate him for the brevity of summer. Fodder for livestock is as much his concern as food for his family. During the snowy half of the year his cattle live indoors and must be fork-fed in the barn. The lakes give him lake trout and whitefish, which are frequently smoked for winter storage. In the swift cold rivers of the west, salmon are caught in nets, hung from frames built over the water like small wharves. This is the southern limit of the reindeer zone; the deer are kept as hobbies rather than as necessities.

Through the year, the Finn of the central region is also a huntsman. The eastern frontier is the haunt of bears; the Finn pursues them to their dens, and makes

them the subject of wood carvings for his winter whittling.

Roads are infrequent at the waistline, and railroads are concentrated toward Bulletin No. 1, February 26, 1940 (over).



BUTTER SPREAD ON THE FESTIVE BOARD IN TIBET MAKES AN ART SHOW INSTEAD OF A BANQUET Photograph by Joseph F. Rock

art, may be seen at Lhasa, the capital city. This display was mounted before the Choni Lamasery, near where northwestern China touches Tibet. The bright colors of these religious butter sculptures were first photographed by Dr. Joseph Rock; reproductions of his pictures, enlarged to life size, Bas-reliefs modeled of colored butter, which hold their shape well in the lofty country's zero winter weather, are made by talented priests for the annual Butter Festival. They are mounted on high triangular frames in front of the country's leading lamaseries. In addition, a narrow butter now hang in the National Geographic Society's Washington headquarters (Bulletin No. 3). frieze at a child's-eye level runs along the base of the tall frames. Close to a hundred of these triangles, with hundreds of square yards of butter

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Spirit of St. Louis—and Substance, Too—Sampled by School Administrators

THE American Association of School Administrators is a large organization, and only a large city can contain a convention of its members. That is why St. Louis is again the scene of their gathering, after being their host in 1936. For St. Louis is the nation's seventh city in size, second city in volume of railroad traffic, and first city in quantity of rip-roaring, dyed-in-the-wool, fur-lined pioneer his-

torical associations of the Middle West.

When Thomas Jefferson in 1803 paid Napoleon fifteen million dollars for the million square miles of the Louisiana Purchase, New Orleans was the prize city in the purchase bag. St. Louis was a settlement of 180 log houses and a church, where Daniel Boone and his two sons felt not too hemmed in when they arrived to sell salt. But the *General Pike*, first steamboat to reach the St. Louis waterfront, chugged up the Mississippi in 1817 with a new era as invisible cargo—the golden era of river shipping.

First Newspaper, First Kindergarten, First Mississippi Bridge

The steamboat shortly lost the travel race to the snorting young iron horse, when a railroad from New York to Chicago gave the latter an advantage over St. Louis. The steamboat port of the south promptly became a "train port" too. The city celebrated with fireworks and booming cannon as the first railway travelers arrived, June 4, 1857. The Oregon Trail passed through, and covered wagons stopped for provisions in such numbers that Oregon finally acknowledged St. Louis as a godparent. Mormons starting on the Salt Lake Trail, and future Texans heading for the Santa Fe Trail, all paused in St. Louis to get new iron tires on their wagon wheels at Sutton's blacksmith shop, or a new wagon cover from the shop in the town's oldest building, still known as the Old Rock House.

Growing with the growing West, St. Louis had the first newspaper, the first theater, the first university west of the Mississippi. Its later newspaper history had many distinguished men in the footnotes. Samuel Clemens, not yet Mark Twain, had a printer's job there. Theodore Dreiser was a cub reporter. Eugene Field wrote a newspaper column with one hand while composing children's poetry with the other. His boyhood home in St. Louis is open to those who think fondly of Wynken, Blynken, and Nod, or Little Boy Blue, or the terrible spat between the

gingham dog and the calico cat that ate each other up.

Another children's milestone in the city marks the opening of the first public kindergarten in the United States, when Miss Susan Blow introduced this German innovation into American school systems. An additional "first," more widely heralded, was the Mississippi's pioneer bridge of steel (illustration, next page).

Lee Crossed Grant's Path Peacefully in St. Louis

When Old Man River had threatened to close the port with sand bars in 1837, a young U. S. Army engineer named Robert E. Lee turned the Mississippi back toward prosperous shipping. Ulysses S. Grant meanwhile had been selling cordwood in the Lucas Market a few blocks from the improved waterfront. Near there he married Julia Dent, before he went north to meet Lee on the battlefield.

St. Louis was the tip of the wedge that almost split the Union. In the Court House, now marked by a plaque, started the long legal battle over the Dred Scott case, weighing questions of slavery which ultimately affected millions, both

Bulletin No. 2, February 26, 1940 (over).

the west. The only eastern railway is a line running north from Kajaana, on which construction has been pushed during the past two years. Most travel is over the rivers that widen at intervals into lakes. Oulujärvi, just south of the waistline, is the country's fourth largest lake.

Remote from shopping centers, women of central Finland can weave the striped woolens for dresses on their homemade hand looms. From the coarse rye flour, they make a distinctive thin, hard bread, cooked to cracker crispness. They take home-woven birch bark baskets into the forest in summer to gather red currants,

tart lingonberries, blueberries, and wild strawberries.

The pine forests of central Finland once were important as a source of the tar known to the outside world as "Stockholm tar." Shipments are now only one fifteenth of their former volume. Foresters carefully strip the bark from the trees, until the pines are encrusted with yellow resin. In smoldering pits the logs are burned slowly, while the resin melts off as wood tar. Formerly the tar was barreled and ferried down the Oulu River in slender tar boats (illustration, below). They sailed precariously over one of Finland's great spectacles, the Pyhäkoski, or Holy Rapids, named in awe and wonder at the miles of churning white water.

Oulu, with some 30,000 people, is the metropolis of the waistline region. Tar works, flour and soap mills, saw mills, and lumber yards give it considerable local commerce and a small slice of international trade. The tanneries are the largest

of their kind in the Finno-Scandinavian regions.

Note: Finland's waistline may be located on the map of Finland which accompanies the article, "Farthest-North Republic," in the October, 1938, National Geographic Magazine. Other sections of Finland are described in this article, and in "Flashes from Finland," February, 1940; "The Nomads of Arctic Lapland," November, 1939; "Where the Sailing Ship Survives" (Aland Islands), January, 1935; and "Helsingfors—A Contrast in Light and Shade," May, 1925. See also in the Geographic News Bulletins: "United States Befriends Friendly Finland," October 30, 1939; "Hobbies and Hard Work in Finland," November 16, 1936; and "Finland—Somber Land of Lakes and Forests," January 27, 1936.

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Photograph from Alma Luise Olson

IN TAR BOATS' WAKE, "GHOST SHIPS" SHOOT FINLAND'S RAPIDS

In the past century, Finnish foresters showed such skill on lake and river, at floating log rafts and tar boats, as to earn the name "amphibious Finns." In long slender boats carrying thirty barrels of wood tar—weighing six tons—they would shoot the rapids down the Oulu River to the port of Oulu on the Gulf of Bothnia. But the tar boats were put out of business by decreased demand for wood tar and by a railroad to carry the diminished shipments. Now "ghosts" of the tar shipping haunt the rapids: modern versions of the tar boats swirl down the river carrying passengers for a thrill. The photograph shows the rapids at Niskakoski.

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China Helps with Butter Bill for Tibet's New Lama

THE Chinese government at Chungking paused in its defense measures long enough to recognize a six-year-old boy as the fourteenth Dalai Lama and ruler of that sky-high mountain nation, Tibet, China's dependency. Then China appropriated 400,000 yuan—much of it for butter—to help defray expenses of enthroning the child on February 24 in Lhasa, Tibet's "Forbidden City" capital. The new Dalai Lama is hailed by religious Tibetans as a boy-god, the reincarnation of the old Dalai Lama, at the instant of whose death the boy was born.

But what has the new boy-god to do with the price of butter in Tibet? As much as Christmas has to do with the price of fir trees, or Easter with the egg market. Tibet, the "land of Shangri-la" isolated behind the earth's highest mountain ranges, is a theocracy; its ruler, the Dalai Lama, is the high priest of Lamaism, a phase of Buddhism. And Lamaism uses butter for ceremonies where other governments use gold braid, precious metals, and fireworks (illustration, inside cover).

Butter for Tea and Taxes, Lamps and Lubrication

The Tibetans' faith discourages slaughter of either man or beast. Instead of eating meat, which is abundant in Tibet's vast herds of sheep, goats, and cattle crossed with yak, they balance their meager diet of barley bread and tea by con-

suming quantities of butter.

The wealthy and the officials in Tibet can dine sumptuously, after the Chinese fashion, on varied foods imported on yak-back over mountain passes two miles above sea level. Valley dwellers in fertile sheltered mountain pockets have homegrown vegetables and even fruits. But the poorer Tibetans, especially on the unbroken grasslands of the north, subsist on butter kneaded into firmness, carried about in woolly sheepskin bags for several years. They eat it mixed with parched barley flour. They drink it in their tea. They rub it on their bodies as a substitute for bathing in long seasons of cold and drought. They give it as a delicacy to their wiry hard-working little horses. They include it in the tribute they pay to the government. They use it as lubrication on the single-rope bridges on which they slide in dangling slings across the gorges of their icy mountain torrents.

But Tibet is the country where you eat your butter and burn it, too. Butter lamps are as essential to the ritual of the Tibetan churches as candles are to some

other religions.

Butter Bas-Reliefs Are "Fireworks" for Religious Festivals

In the felt-topped hut of the northern nomad, a tiny butter lamp usually flickers before the little family shrine blackened with greasy smoke. Of silver, copper, or humble earthenware—some stemmed like champagne glasses—the butter lamps appear beside the bowls of holy water on every Tibetan church altar. Some large lamps hold enough butter to float the burning wick for months without a refill. Their brilliant white light has accentuated, for foreigners, the strangeness of Lama temples—the silk-draped walls, the writhing deities painted on silk, the placid golden Buddhas studded with jewels, the prayer-wheels, the cymbals and gongs and brass-mounted conch shells and trumpets made from human thigh bones.

Yak butter and incense are the chief offerings a Tibetan carries to church. Butter is part of the payment to a lama for services or devil-exorcisms performed in the home. This food staple is doubly valuable to the Tibetan priesthood, which comprises about one-seventh of Tibet's population and must live on the food pro-

duced by the other six-sevenths.

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negro and white, in addition to the slave Scott, his wife, and two children.

When Laclede in 1764 established the post of St. Louis, he was seeking furs from Indian trappers. The early trade in beaver, otter, and deer skins has grown into one of the world's leading markets for raw furs. This 20th century trading post has boasted of handling pelts from every State in the Union and every province in Canada. The other merchandise for which the city is internationally known is Missouri mules. Slaughter houses, meat packing, leather industries, and bakeries occupy much attention today in Laclede's village, once called "Paincourt" ("Short-ot-Bread") because of food scarcity. Another leading industry is metal work—foundries, smelters, and machine shops for iron and steel.

As distributor for these commodities, St. Louis is terminal point for what may well be the greatest number of railroads in the world, between 20 and 30

different lines.

When British immigrant Shaw retired at forty, he took up gardening. As his gift, St. Louis now has the largest collection of plant specimens in the United

States, in the 1,600 acres of the Missouri Botanical Gardens.

Another beauty spot of the city is Forest Park, with further botanical exhibits in a modernistic glass structure called the Jewel Box; an outdoor municipal theater for summer opera; an art museum; and a Jefferson Memorial devoted largely to Thomas Jefferson and Charles Lindbergh. Here too are the careful adventure-story diaries kept by the two leaders of the Lewis and Clark Expedition to the Pacific, who returned to St. Louis and became governors of Missouri.

Note: Additional references to St. Louis will be found in "Missouri, Mother of the West," National Geographic Magazine, April, 1923; and in "St. Louis, Host to Superintendents of N.E.A.," Geographic News Bulletins, February 17, 1936.

Bulletin No. 2, February 26, 1940.



Photograph by Lieut. Donald E. Keyhoe, U.S.M.C. (Ret.)

OLD MAN RIVER WITH HIS CITY CHILD AT HIS SIDE

Mississippi, "Father of Waters," is also father of St. Louis. The river has brought innumerable barges and steamboats around the bend to the cobbled levees whitening the water's edge, since fur trader Laclede climbed ashore to select the site for his dream city. But the great blocks of waterfront buildings between bridges have waited in vain for their ship to come in during recent years, and now they are being razed, to be replaced by a Jefferson park commemorating the Louisiana Purchase. The Eads Bridge (background) was a world wonder in 1874, the first bridge to cross the Mississippi. St. Louis alone now has three others, including the Municipal Bridge (foreground) carrying a main traffic artery to Illinois (right). Two steamboats are moored below the Eads Bridge.

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"Paper Peace" for Romania, Storm Center of the Balkans

A COMMON watch for mutual safety was the pledge of four nations of the Balkan Entente whose diplomats have returned home from their annual conference in Belgrade earlier this month. Balkan newspapers commented that the territorial guarantee applied mainly to Romania, whose boundaries have been challenged by neighbors, Bulgaria and Hungary. Western news stories pointed out that western European nations, though not represented at the conference table, were grimly concerned with Romania, because of the country's resources and not its boundaries. The Belgrade conference agreement that settled neither of Romania's problems was called a "peace on paper."

The economic plum of the Balkans, Romania holds a key position in turbulent

The economic plum of the Balkans, Romania holds a key position in turbulent southeastern Europe because of rich resources of oil and grain and the polyglot mixture of the population included within the present boundaries. Fuel for machines and food for humans both spring in abundance from Romania's soil, and

access to them is of first importance to many nations.

Romans Worked Salt Deposits

Romania is second only to the U.S.S.R. as a European producer of oil and other petroleum products. Germany has a trade agreement to purchase supplies from the country's oil storage tanks. French, British, Belgian, American, and Netherlands oil companies, which control the majority of Romania's wells, are charged with obstructing German purchases. Before the World War, German companies also owned oil wells in Romania. Romania is sixth among the world's oil-producing nations.

Grain comes next to oil on the list of raw materials that make Romania important. Americans would feel at home in many parts of the country, for they would see broad acres of Indian corn, introduced from the New World. Corn, eaten in the form of mush, has become the staple food of the Romanian peasant. Wheat, on the other hand, is an important crop of northwestern Romania, in

Transylvania, acquired from Hungary after the World War.

Besides grain, Romania supplies timber to the international trade. Salt is mined in the north near Bucovina, from deposits worked by the ancient Romans. Zinc, copper, iron, and lead are other mineral resources. Sheep and cattle are exported.

Colorful "Islands" of "Foreigners" Within Boundaries

Within the confines of the country, about the size of Arizona, live some 19,000,000 people. But nearly one third of them are non-Romanians. The 13,000,000 Romanians trace their ancestry to Roman colonists who intermarried with the inhabitants of the region. The other 6,000,000 people include Germans, Jews, Hungarians, Bulgarians, Russians, Yugoslavs, Czechs, Slovaks, Poles, Armenians,

Greeks, Turks, Tatars, and gypsies.

Romania acquired about half of this mixed population and nearly two-thirds of its present territory after the World War. Many of the "foreigners," included within boundaries extended then, have retained their national customs, resulting in numerous alien "islands." More than a million and a half Hungarians and nearly a million Germans live in western and central Romania, in Transylvania (illustration, cover). In the northern and eastern sections are about half a million Ruthenians, 100,000 Russians, the same number of Turks, and 200,000 Tatars.

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The Tibetan social scale could be measured by a butter barometer. Butter from the milk of sheep and goats is rejected by all except servants, although some of it can be slipped into the bags of butter contributed to the government as taxes. Butter from yak milk, however, is a food of prestige.

Wives of the yak herders make butter without churns, rolling day-old milk in leather bags until the yellow lumps form. It is pressed into pats by hand. Its first acquaintance with a churn may come with tea, for Tibetans churn their hardboiled tea with butter and salt until the soupy mixture resembles hot chocolate.

Crowning its year-round service for countless everyday uses, butter becomes the center of attraction at the Tibetan winter religious festival which combines many features of Christmas, New Year's, and the Fourth of July. Instead of fireworks, there is an art show of butter sculpture in colors (illustration, below).

Note: Photographs and descriptions of the butter ceremonies of Lamaism are found in "Life Among the Lamas of Choni," National Geographic Magasine, November, 1928; Tibet and Lamaism are described also in "Sungmas, The Living Oracles of the Tibetan Church," October, 1935; "Konka Risumgongba, Holy Mountain of the Outlaws," July, 1931; "The Glories of the Minya Konka," October, 1930; "Seeking the Mountains of Mystery," February, 1930; "Through the Great River Trenches of Asia," August, 1926; "Experiences of a Lone Geographer," September, 1925; "Life Among the People of Eastern Tibet," September, 1921. See also in the Geographic News Bulletins: "Tibetan Boy-Buddha Now Rules Asia's Strangest Country," November 6, 1939.

Bulletin No. 3, February 26, 1940.



Photograph by Joseph F. Rock
RELIGIOUS CONFECTIONERY TURNS MILD BUTTER INTO
FEROCIOUS DEMONS

Much of Tibet's butter sculpture is bas-relief, but special pieces are modeled in the round. A dragon's head of butter gapes at each corner of the tiered butter pagoda. The goggle-eyed butter demon sits enthroned on a goggle-eyed dragon steed, in a welter of arabesques, flowers, and sacred symbols, all of solid butter. The lama sculptor spends months in a cold workroom, mixing yak butter with powdered pigments to get as many as twenty vivid colors, and modeling the designs with fingers dipped in cold water to prevent melting his work.

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South America's Lake Titicaca To Have North American Fish

A STRANGE fish migration is now under way between continents, taking unhatched North American fish on a South American mountain climb to the cold waters of South America's largest lake. Two million whitefish eggs and hundreds of thousands of lake trout eggs, in special insulated shipping cases, are making a 4,700-mile journey from New York to Lake Titicaca, on the border between Peru and Bolivia. They will be released in an attempt to stock South America's largest lake with food fishes more valuable than its native kinds.

Lake Titicaca, the world's highest body of water with steam navigation, lies among towering summits of the Andes about 12,500 feet above sea level. With an area one-third that of Lake Ontario, it is a water link in the trade route between Peru's Pacific port of Mollendo and La Paz, capital of land-locked Bolivia. The lake link connects with the Mollendo-Puno railroad in Peru, tying it to the Guaqui-

La Paz line in Bolivia.

Shallow, Icy Lake Water Never Freezes

Steamers on this lake route often run aground, because Lake Titicaca is generally quite shallow. Along the eastern side, however, a trough in the lake bed is deep enough to immerse all but a few feet of the Eiffel Tower. Summer rains and melting snows raise the elevation of Titicaca's surface by five to six feet. The lake

water, although frigidly cold even in midsummer, never freezes.

The ships plying between Puno, Peru, and the Bolivian port of Guaqui were made in the British Isles, imported in pieces, and assembled on the lake shores. Before the railroad from the Pacific to the lake was built, sections of the first two steamers were transported on burros and mules. The pack animals had a mountain climb equal to a gigantic staircase more than two miles high. Forty-six freight cars were required to bring in the parts of the Ollanta, one of the newest steamers.

A railroad brought the ships, but the ships, in turn, brought in a railroad. Equipment and material for the new Bolivian line south from La Paz to Oruro were carried across the lake by steamer. Ties and telegraph poles came from Oregon and Washington, rails from Pittsburgh, locomotives from Philadelphia.

From the deck of a lake steamer the traveler who is unaffected by high altitudes finds Titicaca a grandstand from which to view some of the outstanding scenic, historic, and geographic wonders of South America.

Home of the Wild White Potato

When he sails from the sprawling little Peruvian town of Puno, the landward panorama appears barren and uninviting. The region here is nearly treeless. Aymará Indians cultivate small patches of potatoes (the staple food above 11,000 feet) and barley. The white potato is believed to have originated here; it still may be found growing wild on the hillsides.

Where there is grass, herds of llamas and alpacas graze. Only the Indians seem to know how to handle the shy, temperamental llamas, which are the chief pack animals of this region. The llama has determined a common unit of weight around Titicaca, 101.43 pounds, which is a normal load for the animal. Mules and

burros do the work of horses, which cannot endure the altitude.

Although the climate is harsh and resources scanty, some areas around Lake Titicaca support over 100 people per square mile. Homes of the Indians are small huts of adobe, stone, and thatch. Copper-skinned wives and daughters spin and

Bulletin No. 5, February 26, 1940 (over).

East meets west in Romania. Mosques, minarets, and fezzes give the appearance of a Turkish town to Balcic, a port on the Black Sea. The regions of Romania adjoining Bulgaria have a population of about 300,000 Bulgarians, and here the same number of gypsies forms a colorful foreign element. Many of the gypsies are actors. Some sell flowers in the cities, while others roam the country as musicians, occasionally accompanied by trained bears (illustration, below). Braila, the home town of the writer of gypsy tales, Conrad Bercovici, is one of the oldest gypsy settlements.

Note: Additional pictorial and descriptive material about Romania, including a full-page map, is contained in "American Girl Cycles Across Romania," National Geographic Magazine, November, 1938; "Spell of Romania," April, 1934; "Transylvania and Its Seven Castles," March, 1926. See also in the Geographic News Bulletins: "Dobruja: A Magnet for Black Sea Diplomacy," November 20, 1939; "Romania's Border Areas Coveted by Dissatisfied Neighbors," October 16, 1939; and "Germany Is Best Customer at Romanian Bargain Counter," May 1, 1939.

Bulletin No. 4, February 26, 1940.



Photograph by J. Berman

WANDERING GYPSY, WEARY PEASANT, AND DANCING BEAR FORM A "BALKAN ENTENTE"

Sheepskin caps identify the gypsies, among felt-hatted villagers and boys in the visored caps of a high school uniform. The muzzled performing bear dances at the command of his business manager, who holds the chain and a big stick. His one-man orchestra thumps a homemade drum as accompaniment. A policeman eyes the crowd watchfully (upper right). Peasants too tired to be amused may lie on the ground and have the dancing bear's heavy footwork knead the muscles of their backs, strained with work in the fields.

weave at home. They fashion sturdy fabrics from llama and sheep wool and cotton. The alpacas and their wild cousins, the vicuñas, yield a wool which is woven into The Indians are also skilled dyers and tanners.

The native reed boat, called balsa, is the "trade-mark" of Lake Titicaca (illustration, below). Bunches of the bullrushes (totora) which grow along the shores are gathered and bound in bundles. Then they are tied together to form canoeshaped boats. Yellow matting sails propel the odd craft over the lake.

The farther out the traveler sails on Titicaca, the more impressive the scenery. Ducks, geese, gulls, and other shore birds wing close to the waves, and distant snow-capped peaks form a spectacular background gashed by canyonlike valleys.

Founders of Cuzco and the Inca empire are supposed by some students of South American culture to have migrated from the Island of the Sun, which lies close to the regular ship route in the southern half of the lake. Ruins of buildings and paved roads still remain there and on the nearby Island of the Moon.

Note: Additional references to and photographs of Lake Titicaca are found in "Buenos Aires to Washington by Horse," National Geographic Magazine, February, 1929; and "The Heart of Aymará Land," February, 1927.

See also in the Geographic News Bulletins: "Lake Titicaca, Where Steamships Ply Above the Clouds," February 10, 1936.

Bulletin No. 5, February 26, 1940.



Photograph by Gerstmann

STRAWS IN THE WIND MOVE STRAW BOATS OVER TITICACA'S ICY WATERS

Since wood for boats is hard to obtain, fishermen and ferrymen sail over the shallow lake in the native balsas, made of bundles of dried reeds from the reed marshes of the lake margins. The straw-dried reeds soak up moisture and become waterlogged in a few months. The reed mat sail (right) is supported on crooked masts, sometimes pieced together of short sticks because of wood scarcity. Poles (right and center) push the boats along in the shallows, and serve as oars in deeper water. If a sudden rain increases the ever-present hazard of becoming waterlogged, balsas must rush to shore to avoid sinking.

